a Braille dot positioned on the topside of the flexible diaphragm;

four electroactive polymer bending elements, the bending elements substantially of equal dimensions, each bending element having a top edge and a bottom edge;

a first two of the four electroactive polymer bending elements positioned to cover a bottom aperture of a windowed side, the bottom edge of the first two electroactive polymer bending elements secured to one of the at least two support blocks, the top edge of each of the first two electroactive polymer bending elements secured to the support strip; and

a second two of the four electroactive polymer bending elements positioned to cover a bottom aperture of a windowed side, the top edge of the first second electroactive polymer bending elements secured to the top of the housing, the bottom edge of each of the second two electroactive polymer bending elements secured to the support strip.

**20**. A Braille cell comprising:

a substantially fluid-tight housing having a tactile member cover, the tactile member cover positioned on a top surface of the housing;

a tactile member in the housing, the tactile member being movable between a neutral position at which the tactile member is substantially flush with the tactile member cover and is not palpable and a reading position at which the tactile member is extended beyond the tactile member cover and is palpable;

a support member in the housing for supporting the tactile member when the member is in the reading position;

an actuator integrally connected to the support member for moving the tactile member between a neutral position and a reading position through the displacement of fluid within the substantially fluid-tight housing, the actuator actuated by an electrical voltage and further comprising, an electroactive polymer which bends upon application of an electrical voltage, the bending of the electroactive polymer to displace a fluid volume within the housing sufficient to move the tactile member between a neutral position and a reading position, the bending of the electroactive polymer sufficient to move the support member to support the tactile member when in the reading position.

**21**. A Braille display apparatus comprising a plurality of Braille cells, each Braille cell comprising a substantially fluid-tight housing, the fluid-tight housing further comprising a tactile member cover, a tactile member in the housing, the tactile member being movable between a neutral position at which the tactile member is substantially flush with the tactile member cover and is not palpable and a reading position at which the tactile member is extended beyond the tactile member cover and is palpable, a support member in the housing for supporting the tactile member when the member is in the reading position, an actuator integrally connected to the support member for moving the tactile member between a neutral position and a reading position through the displacement of fluid within the substantially fluid-tight housing, the actuator actuated by an electrical voltage and further comprising, an electroactive polymer which bends upon application of an electrical voltage, the bending of the electroactive polymer to displace a fluid volume within the housing sufficient to move the tactile member between a neutral position and a reading position, the bending of the electroactive polymer sufficient to move the support member to support the tactile member when in the reading position.

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